

List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 - 13 (Cancelled).

14. (New) A sensor arrangement, comprising:
 - at least two sample chambers;
 - at least two potentiometric FET-sensors, preferably ISFET-sensors or ChemFET-sensors, having, in each case, a sensitive surface section, wherein each sensitive surface section lies in flow connection with its one of the said sample chambers; and
 - a reference cell having a reference medium for providing a reference potential, wherein said at least two sample chambers are connected with the reference medium via an electrolyte bridge.
15. (New) The sensor arrangement as claimed in claim 14, further comprising:
 - a first module, which contains said at least two sample chambers.
16. (New) The sensor arrangement as claimed in claim 15, further comprising:
 - at least a second module, which has a plurality of potentiometric FET-sensors.
17. (New) The sensor arrangement as claimed in claim 15, further comprising:
 - a plurality of second modules, each of which has a potentiometric FET-sensor.
18. (New) The sensor arrangement as claimed in claim 15, wherein:
 - said first module comprises a plate-shaped platform with bores, which serve as sample chambers.

19. (New) The sensor arrangement as claimed in claim 18, wherein:
said bores traverse the platform; and
said at least a second module, or second modules, are embodied as floor elements,
which close the traversing bores from the underside of said first module.

20. (New) The sensor arrangement as claimed in claim 18, wherein:
said potentiometric FET-sensors are integrated into said second module in such a
manner that, in each case, a FET-sensor aligns with its one of the traversing bores.

21. (New) The sensor arrangement as claimed in claim 14, wherein:
said electrolyte bridge extends via electrolyte canals, which are formed in the
platform.

22. (New) The sensor arrangement as claimed in claim 21, wherein:
said platform comprises a plurality of elements, preferably a plurality of layers, and
the electrolyte canals are located in an interface between two neighboring elements.

23. (New) The sensor arrangement as claimed in claim 14, wherein:
said electrolyte bridge extends via electrolyte canals which are integrated in said
second module.

24. (New) The sensor arrangement as claimed in claim 14, wherein:
said reference cell has a potentiometric reference-FET-sensor for providing a
pseudo-reference-potential, which is registered against the reference-potential of a
reference electrode.

25. (New) The sensor arrangement as claimed in claim 24, wherein:
said reference electrode is contacted with the reference medium in said reference
cell.

26. (New) The sensor arrangement as claimed in claim 25, wherein:
the potentials $U_{\text{diff}1}$, $U_{\text{diff}2}$, ... $U_{\text{diff}N}$ of N FET-sensors in the sample chambers are
determined against the pseudo-reference-potential, and the measured-variable-

relevant, potential differences are, in each case, determined by difference formation between the pertinent potential and the reference potential - thus, in the case of pH, according to the formulas $U_{\text{pH}1\dots N} = U_{\text{diff}1\dots N} - U_{\text{diffref}}$.